

What is claimed is:

1. A gelatinous elastomeric material comprising:

a first elastomer;

a second elastomer; and

a plasticizing agent;

wherein said first elastomer is an ultra high molecular weight triblock copolymer of the general configuration A-B-A;

wherein said second elastomer is selected from the group consisting of very high molecular weight triblock copolymers of the general configuration A-B-A and ultra high molecular weight triblock copolymers of the general configuration A-B-A

wherein A is a non-elastomeric polymer;

wherein B is an elastomeric polymer;

wherein said plasticizing agent is compatible with said elastomeric polymer B;

wherein said plasticizing agent comprises at least about 60 weight percent of the gelatinous elastomeric material, the weight percentage being based upon the combined weight of the plasticizing agent, the first elastomer and the second elastomer;

wherein said plasticizing agent softens said first elastomer and said second elastomer;

wherein the gelatinous elastomeric material has a rebound rate of about one second or less; and

wherein the gelatinous elastomeric material has a durometer of about 15 Shore A or lower.

2. A gelatinous elastomeric material as recited in claim 1, wherein said second elastomer is an ultra high molecular triblock copolymer of the general configuration A-B-A.

3. A gelatinous elastomeric material as recited in claim 1,

wherein A is selected from the group consisting of monoalkenylarene polymers and

wherein B is a hydrogenated polymer comprising a plurality of butadiene monomers and
a plurality of isoprene monomers.

4. A gelatinous elastomeric material as recited in claim 3, wherein substantially all of the double
bonds have been removed from said elastomeric polymer B by hydrogenation.

5. A gelatinous elastomeric material as recited in claim 4, wherein said first elastomer has a
solution viscosity, 20 weight percent solids in 80 weight percent toluene, the weight percentages
based on the total weight of the solution, at from about 25°C. to about 30°C., of at least about
100,000 cps.

6. A gelatinous elastomeric material as recited in claim 4, wherein a mixture including about 20
weight percent of said first elastomer and about 80 weight percent toluene, the weight
percentages based on the total weight of the mixture, at from about 25°C. to about 30°C., does
not form a solution.

7. A gelatinous elastomeric material as recited in claim 3, wherein said first elastomer has a
solution viscosity, 20 weight percent solids in 80 weight percent toluene, the weight percentages
based on the total weight of the solution, at from about 25°C. to about 30°C., of at least about
100,000 cps.

8. A gelatinous elastomeric material as recited in claim 3, wherein a mixture including about 20
weight percent of said first elastomer and about 80 weight percent toluene, the weight
percentages based on the total weight of the mixture, at from about 25°C. to about 30°C., does
not form a solution.

9. A gelatinous elastomeric material as recited in claim 1, wherein said first elastomer has a molecular weight of at least about 300,000, as determined by gel permeation chromatography.

~~10.~~ A gelatinous elastomeric material comprising:

an elastomer; and

a plasticizing agent;

wherein said elastomer is an ultra high molecular weight triblock copolymer of the general configuration A-B-A;

wherein A is a non-elastomeric polymer;

wherein B is an elastomeric polymer;

wherein said plasticizing agent is compatible with said elastomeric polymer B;

wherein said plasticizing agent comprises at least about 60 weight percent of the gelatinous elastomeric material, the weight percentage being based upon the combined weight of the plasticizing agent and the elastomer;

wherein said plasticizing agent softens said first elastomer and said second elastomer;

wherein the gelatinous elastomeric material has a rebound rate of about one second or less; and

wherein the gelatinous elastomeric material has a durometer of about 15 Shore A or lower.

11. A gelatinous elastomeric material as recited in claim 10, wherein said plasticizing agent comprises a plurality of components;

wherein the majority of said components are compatible with said elastomeric polymer B;

wherein at least one of said components is a hydrocarbon resin; and

wherein at least one of said components is selected from the group consisting of naturally derived oils, synthetic oils, and liquid oligomers.

12. A gelatinous elastomeric material as recited in claim 10,

wherein A is selected from the group consisting of monoalkenylarene polymers and

wherein B is a hydrogenated polymer comprising a plurality of butadiene monomers and a plurality of isoprene monomers.

13. A gelatinous elastomeric material as recited in claim 12, wherein substantially all of the double bonds have been removed from said elastomeric polymer B by hydrogenation.

14. A gelatinous elastomeric material as recited in claim 13, wherein said first elastomer has a solution viscosity, 20 weight percent solids in 80 weight percent toluene, the weight percentages based on the total weight of the solution, at from about 25°C. to about 30°C., of at least about 100,000 cps.

15. A gelatinous elastomeric material as recited in claim 13, wherein a mixture including about 20 weight percent of said first elastomer and about 80 weight percent toluene, the weight percentages based on the total weight of the mixture, at from about 25°C. to about 30°C., does not form a solution.

16. A gelatinous elastomeric material as recited in claim 15, wherein said plasticizing agent comprises a plurality of components;

wherein the majority of said components are compatible with said elastomeric polymer B;

wherein at least one of said components is a hydrocarbon resin; and

wherein at least one of said components is selected from the group consisting of naturally derived oils, synthetic oils, and liquid oligomers.

- ~~17. A gelatinous elastomeric material as recited in claim 13, wherein said plasticizing agent comprises a plurality of components;~~
- ~~wherein the majority of said components are compatible with said elastomeric polymer~~
- ~~B;~~
- ~~wherein at least one of said components is a hydrocarbon resin; and~~
- ~~wherein at least one of said components is selected from the group consisting of naturally derived oils, synthetic oils, and liquid oligomers.~~
18. A gelatinous elastomeric material as recited in claim 13, and further comprising a plurality of hollow spherical objects embedded within the material and having a diameter of less than about 2000 microns.
19. A gelatinous elastomeric material as recited in claim 18, wherein said spherical objects comprise at least about 30% of the material, by volume.
20. A gelatinous elastomeric material as recited in claim 18, wherein said spherical objects comprise at least about 50% of the material, by volume.

200704231430

21. A gelatinous elastomeric material as recited in claim 12, wherein said first elastomer has a solution viscosity, 20 weight percent solids in 80 weight percent toluene, the weight percentages based on the total weight of the solution, at from about 25°C. to about 30°C., of at least about 100,000 cps.

22. A gelatinous elastomeric material as recited in claim 12, wherein a mixture including about 20 weight percent of said first elastomer and about 80 weight percent toluene, the weight percentages based on the total weight of the mixture, at from about 25°C. to about 30°C., does not form a solution.

23. A gelatinous elastomeric material as recited in claim 10, wherein said first elastomer has a molecular weight of at least about 300,000, as determined by gel permeation chromatography.

24. A gelatinous elastomeric material as recited in claim 10, wherein said plasticizing agent comprises at least about 71 weight percent of the material, the weight percentage being based on the combined weight of the plasticizing agent and the elastomer.

25. A gelatinous elastomeric material as recited in claim 10, and further comprising a plurality of hollow spherical objects embedded within the material and having a diameter of less than about 2000 microns.

26. A gelatinous elastomeric material as recited in claim 25, wherein said spherical objects comprise at least about 30% of the material, by volume.

27. A gelatinous elastomeric material as recited in claim 25, wherein said spherical objects comprise at least about 50% of the material, by volume.

28. An elastomeric material having

a plasticizer and

a triblock copolymer of the general configuration A-B-A;

wherein A is selected from the group consisting of monoalkenylarene polymers;
wherein B is a hydrogenated polymer including a plurality of isoprene monomers and a plurality of butadiene monomers;

wherein said isoprene monomers comprise at least about 30 weight percent of said hydrogenated polymer B;

wherein said butadiene monomer comprise at least about 30 weight percent of said hydrogenated polymer B;

wherein a mixture including about 20 weight percent of said triblock copolymer and about 80 weight percent toluene, the weight percentages based on the total weight of the mixture, at from about ~~25°C. to about 30°C.~~, does not form a solution;

wherein said plasticizer associates with said hydrogenated polymer B;

wherein said triblock copolymer has a measurable percent elongation at break;

wherein said plasticizer tends to increase the percent elongation at break of said triblock copolymer;

wherein said triblock copolymer has a rigidity measurable on the Gram Bloom scale; and

wherein said plasticizer tends to decrease the Gram Bloom rigidity of said triblock

copolymer.

29. An elastomeric material as recited in claim 28, and further comprising a plurality of gas pockets.

30. An elastomeric material as recited in claim 29, wherein said gas pockets comprise at least about 40% of the material, by volume.

31. An elastomeric material as recited in claim 29, wherein said gas pockets comprise at least about 70% of the material, by volume.

32. An elastomeric material as recited in claim 28, wherein said triblock copolymer is an ultra high molecular weight triblock copolymer.

33. An elastomeric material as recited in claim 28, and further comprising a plurality of hollow spherical objects embedded within the material and having a diameter of less than about 2000 microns.

34. An elastomeric material as recited in claim 33, wherein said spherical objects comprise at least about 30% of the material, by volume.

35. An elastomeric material as recited in claim 33, wherein said spherical objects comprise at least about 50% of the material, by volume.

36. An elastomeric material as recited in claim 28, and further comprising:
a plurality of gas pockets and

a plurality of microspheres;
wherein said gas pockets comprise at least about 20% of the material, by volume; and
wherein said microspheres comprise at least about 20% of the material, by volume.

37. An elastomeric material as recited in claim 28, wherein said plasticizer comprises a plurality of components;

wherein the majority of said components are compatible with said elastomeric polymer

-B;

wherein at least one of said components is a hydrocarbon resin; and
wherein at least one of said components is selected from the group consisting of naturally derived oils, synthetic oils, and liquid oligomers.

38. An elastomeric material as recited in claim 28, wherein said plasticizer increases said percent elongation at break of said triblock copolymer by at least about a factor of two.

~~39.~~ An elastomeric material as recited in claim ~~28~~, wherein said plasticizer decreases said Gram Bloom rigidity of said triblock copolymer by at least about a factor of two.

~~Sub 33~~ ~~40.~~ An elastomeric material having

a plasticizer and

a triblock copolymer of the general configuration A-B-A;

wherein A is selected from the group consisting of monoalkenylarene polymers;

wherein B is a hydrogenated polymer including a plurality of ethylene/propylene monomers and a plurality of ethylene/butylene monomers;

wherein the combined weights of said ethylene/propylene monomers and said ethylene/butylene monomers comprise more than about 50 weight percent of said hydrogenated polymer B;

wherein a mixture including about 20 weight percent of said triblock copolymer and about 80 weight percent toluene, the weight percentages based on the total weight of the mixture, at from about 25°C. to about 30°C., does not form a solution;

wherein said plasticizer associates with said hydrogenated polymer B;

wherein said triblock copolymer has a measurable percent elongation at break;

wherein said plasticizer tends to increase the percent elongation at break of said triblock copolymer;

wherein said triblock copolymer has a rigidity measurable on the Gram Bloom scale; and

wherein said plasticizer tends to decrease the Gram Bloom rigidity of said triblock copolymer.

~~41.~~ An elastomeric material as recited in claim ~~40~~, and further comprising a plurality of gas pockets.

~~14~~ 42. An elastomeric material as recited in claim ~~41~~, wherein said gas pockets comprise at least about 40% of the material, by volume.

~~15~~ 43. An elastomeric material as recited in claim ~~41~~, wherein said gas pockets comprise at least about 70% of the material, by volume.

~~16~~ 44. An elastomeric material as recited in claim ~~40~~, wherein said triblock copolymer has a molecular weight of at least about 300,000, as determined by gel permeation chromatography.

~~17~~ 45. An elastomeric material as recited in claim ~~40~~, and further comprising a plurality of hollow spherical objects embedded within the material and having a diameter of less than about 2000 microns.

~~18~~ 46. An elastomeric material as recited in claim ~~45~~, wherein said spherical objects comprise at least about 30% of the material, by volume.

~~19~~ 47. An elastomeric material as recited in claim ~~45~~, wherein said spherical objects comprise at least about 50% of the material, by volume.

~~20~~ 48. An elastomeric material as recited in claim ~~40~~, and further comprising:
a plurality of gas pockets and
a plurality of microspheres;
wherein said gas pockets comprise at least about 20% of the material, by volume; and
wherein said microspheres comprise at least about 20% of the material, by volume.

~~21~~ 49. An elastomeric material as recited in claim ~~40~~, wherein said plasticizer comprises a plurality of components;

b b

B;

~~wherein the majority of said components are compatible with said elastomeric polymer~~
wherein at least one of said components is a hydrocarbon resin; and

wherein at least one of said components is selected from the group consisting of naturally derived oils, synthetic oils, and liquid oligomers.

~~12~~ 50. An elastomeric material as recited in claim ~~40~~, wherein said plasticizer increases said percent elongation at break of said triblock copolymer by at least about a factor of two.

~~13~~ 51. An elastomeric material as recited in claim ~~40~~, wherein said plasticizer decreases said Gram Bloom rigidity of said triblock copolymer by at least about a factor of two.

~~14~~ 52. An elastomeric material having
a plasticizer and

a triblock copolymer of the general configuration A-B-A;

wherein said triblock copolymer is an ultra high molecular weight triblock copolymer;

wherein A is selected from the group consisting of monoalkenylarene polymers;

wherein B is a hydrogenated polymer including a plurality of ethylene/propylene monomers and a plurality of ethylene/butylene monomers;

wherein the combined weights of said ethylene/propylene monomers and said ethylene/butylene monomers comprise at least about 50 weight percent of said hydrogenated polymer B;

wherein said plasticizer associates with said hydrogenated polymer B;

wherein said triblock copolymer has a measurable percent elongation at break;

wherein said plasticizer tends to increase the percent elongation at break of said triblock copolymer;

wherein said triblock copolymer has a rigidity measurable on the Gram Bloom scale; and

wherein said plasticizer tends to decrease the Gram Bloom rigidity of said triblock copolymer.

~~53.~~ An elastomeric material as recited in claim ~~52~~, and further comprising a plurality of gas pockets.

~~54.~~ An elastomeric material as recited in claim ~~53~~, wherein said gas pockets comprise at least about 40% of the material, by volume.

~~55.~~ An elastomeric material as recited in claim ~~53~~, wherein said gas pockets comprise at least about 70% of the material, by volume.

~~56.~~ An elastomeric material as recited in claim ~~52~~, wherein said triblock copolymer has a molecular weight of at least about 300,000, as determined by ~~gel permeation chromatography~~.

~~57.~~ An elastomeric material as recited in claim ~~52~~, and further comprising a plurality of hollow spherical objects embedded within the material and having a diameter of less than about 2000 microns.

~~58.~~ An elastomeric material as recited in claim ~~57~~, wherein said spherical objects comprise at least about 30% of the material, by volume.

~~59.~~ An elastomeric material as recited in claim ~~57~~, wherein said spherical objects comprise at least about 50% of the material, by volume.

~~60.~~ An elastomeric material as recited in claim ~~52~~, and further comprising:
a plurality of gas pockets and
a plurality of microspheres;

wherein said gas pockets comprise at least about 20% of the material, by volume; and
wherein said microspheres comprise at least about 20% of the material, by volume.

~~61.~~ An elastomeric material as recited in claim ~~52~~, wherein said plasticizer comprises a plurality of components;

b
b
~~wherein the majority of said components are compatible with said elastomeric polymer~~

~~B,~~

wherein at least one of said components is a hydrocarbon resin; and

wherein at least one of said components is selected from the group consisting of naturally derived oils, synthetic oils, and liquid oligomers.

~~32~~ 62. An elastomeric material as recited in claim ~~52~~, wherein said plasticizer increases said percent elongation at break of said triblock copolymer by at least about a factor of two.

~~33~~ 63. An elastomeric material as recited in claim ~~52~~, wherein said plasticizer decreases said Gram Bloom rigidity of said triblock copolymer by at least about a factor of two.

~~34~~ 64. An elastomeric material as recited in claim ~~52~~, wherein a mixture including about 20 weight percent of said triblock copolymer and about 80 weight percent toluene, the weight percentages based on the total weight of the mixture, at from about 25°C. to about 30°C., has a solution viscosity of at least about 100,000 cps.

~~35~~ 65. An elastomeric material as recited in claim ~~52~~, wherein a mixture including about 20 weight percent of said triblock copolymer and about 80 weight percent toluene, the weight percentages based on the total weight of the mixture, at from about 25°C. to about 30°C., does not form a solution.

66. A gelatinous elastomeric material comprising:

a plasticizer including a plurality of plasticizing polymer molecules and

an elastomer comprising a plurality of elastomeric triblock copolymers of the general configuration A-B-A, each of said triblock copolymers having:

two end blocks A and

one mid block B having two ends;

wherein each end of said mid block B is covalently linked to one of said end blocks A;

wherein said end blocks A are non-elastomeric polymers;

wherein said mid block B is an elastomeric polymer;

wherein said end blocks A of different triblock copolymers associate to form a three dimensional web of triblock copolymers;

wherein said mid block B of each of said triblock copolymers includes a plurality of backbone carbon molecules and a plurality of side chains having a length of one carbon;

wherein said plasticizing polymer molecules are trapped within said three dimensional web;

wherein said plasticizing polymer molecules, upon placement of the material under a load, tend to facilitate disentanglement and elongation of said mid blocks B during elongation of the material;

wherein said plasticizing polymer molecules, upon release of the load from the material, tend to facilitate recontraction of the material;

wherein said plasticizing polymer molecules comprise at least about 60 weight percent of the material, based on the combined weights of said triblock copolymers and said plasticizing polymers;

wherein said elastomer has a measurable percent elongation at break;

wherein said plasticizer tends to increase the percent elongation at break of said elastomer;

wherein said elastomer has a rigidity measurable on the Gram Bloom scale; and

wherein said plasticizer tends to decrease the Gram Bloom rigidity of said elastomer.

67. A gelatinous elastomeric material as recited in claim 66, wherein said side chains occur, on average, on from about one of every four of said backbone carbon atoms to about one of every twenty of said backbone carbon atoms.

68. A gelatinous elastomeric material as recited in claim 66, wherein said plasticizer increases the percent elongation at break of said elastomer by at least about a factor of two.

69. A gelatinous elastomeric material as recited in claim 66, wherein said plasticizer decreases the Gram Bloom rigidity of said elastomer by at least about a factor of two.

70. A gelatinous elastomeric material comprising:

a plasticizer including a plurality of plasticizing polymer molecules and

an elastomer comprising a plurality of elastomeric triblock copolymers of the general configuration A-B-A, each of said triblock copolymers having:

two end blocks A and

one mid block B having two ends;

wherein each end of said mid block B is covalently linked to one of said end blocks A;

wherein said end blocks A are non-elastomeric polymers;

wherein said mid block B is an elastomeric polymer;

wherein said end blocks A of different triblock copolymers associate to form a three dimensional web of triblock copolymers;

wherein said mid block B of each of said triblock copolymers includes a plurality of backbone carbon molecules and a plurality of side chains;

wherein said side chains occur, on average, on from about one of every four of said backbone carbon atoms to about one of every twenty of said backbone carbon atoms;

wherein said plasticizing polymer molecules are trapped within said three dimensional web;

wherein said plasticizing polymer molecules, upon placement of the material under a load, tend to facilitate disentanglement and elongation of said mid blocks B during elongation of the material;

wherein said plasticizing polymer molecules, upon release of the load from the material, tend to facilitate recontraction of the material;

wherein said plasticizing polymer molecules comprise at least about 60 weight percent of the material, based on the combined weights of said triblock copolymers and said plasticizing polymers;

wherein said elastomer has a measurable percent elongation at break;

wherein said plasticizer tends to increase the percent elongation at break of said elastomer;

wherein said elastomer has a rigidity measurable on the Gram Bloom scale; and

wherein said plasticizer tends to decrease the Gram Bloom rigidity of said elastomer.

71. A gelatinous elastomeric material as recited in claim 70, wherein substantially all of said side chains have a length of one carbon.

72. A gelatinous elastomeric material as recited in claim 70, wherein said plasticizer increases the percent elongation at break of said elastomer by at least about a factor of two.

73. A gelatinous elastomeric material as recited in claim 70, wherein said plasticizer decreases the Gram Bloom rigidity of said elastomer by at least about a factor of two.

Sub B4 74. A gelatinous elastomeric material comprising:

a plasticizer including a plurality of plasticizing polymer molecules,

Subj. Con.

an elastomer comprising a plurality of elastomeric triblock copolymers of the general configuration A-B-A, each of said triblock copolymers having:

two end blocks A and

one mid block B having two ends, and

a plurality of hollow spherical objects;

wherein each end of said mid block B is covalently linked to one of said end blocks A;

wherein said end blocks A are non-elastomeric polymers;

wherein said mid block B is an elastomeric polymer;

wherein said end blocks A of different triblock copolymers associate to form a three dimensional web of triblock copolymers;

wherein said mid block B of each of said triblock copolymers includes a plurality of backbone carbon molecules and a plurality of side chains;

wherein said plasticizing polymer molecules are trapped within said three dimensional web;

wherein said plasticizing polymer molecules, upon placement of the material under a load, tend to facilitate disentanglement and elongation of said mid blocks B during elongation of the material;

wherein said plasticizing polymer molecules, upon release of the load from the material, tend to facilitate recontraction of the material;

wherein said plasticizing polymer molecules comprise at least about 60 weight percent of the material, based on the combined weights of said triblock copolymers and said plasticizing polymers;

wherein said elastomer has a measurable percent elongation at break;

*Subj
cont*

wherein said plasticizer tends to increase the percent elongation at break of said elastomer;

wherein said elastomer has a rigidity measurable on the Gram Bloom scale; and

wherein said plasticizer tends to decrease the Gram Bloom rigidity of said elastomer;

wherein said hollow spherical objects are trapped within said three dimensional web; and

wherein said hollow spherical objects reduce exudation of said plasticizer molecules from said three dimensional web.

~~55~~ 75. A gelatinous elastomeric material as recited in claim ~~74~~ 31

wherein said hollow spherical objects are elastic;

wherein said hollow spherical objects deform under a compression force; and

wherein said hollow spherical objects instantaneously rebound to substantially their original shape and size following cessation of a force which compresses said spherical objects to a thickness of from about 50% to less than about 100% of the original diameter of said spherical objects.

~~39~~ 76. A gelatinous elastomeric material as recited in claim 74, wherein said triblock copolymers are ultra high molecular weight triblock copolymers.

~~39~~ 77. A gelatinous elastomeric material as recited in claim ~~74~~ 31, wherein said plasticizer increases the percent elongation at break of said elastomer by at least about a factor of two.

~~40~~ 78. A gelatinous elastomeric material as recited in claim ~~74~~ 31, wherein said plasticizer decreases the Gram Bloom rigidity of said elastomer by at least about a factor of two.

79. An elastomeric material comprising:
a gelatinous material including:
a ultra high molecular weight thermoplastic elastomer and

a plasticizer; and
a plurality of hollow spherical objects dispersed throughout the gelatinous material;
wherein said plasticizer comprises at least about 60 weight percent of said gelatinous material, based on the combined weights of said ultra high molecular weight elastomer and said plasticizer;

wherein said hollow spherical objects have an average diameter;
wherein the exterior surface of one of said hollow spherical objects is spaced, on average, less than about one and a half of said average diameters from the exterior surface of at least one other of said hollow spherical objects; and

- wherein the elastomeric material has a durometer of less than about Shore A 15.
80. An elastomeric material as recited in claim 79, wherein the elastomeric material has a specific gravity of less than about 0.65.
81. An elastomeric material as recited in claim 79, wherein the elastomeric material has a specific gravity of less than about 0.45.
82. An elastomeric material as recited in claim 79, wherein the elastomeric material has a specific gravity of less than about 0.25.
83. An elastomeric material as recited in claim 79, and further comprising a plurality of gas pockets.
84. An elastomeric material as recited in claim 83, wherein said gas pocket comprise at least about 10% of the elastomeric material, by volume.
85. An elastomeric material as recited in claim 79,

wherein said ultra high molecular weight thermoplastic elastomer is a triblock copolymer of the general configuration A-B-A;

wherein A is selected from the group consisting of monoalkenylarene polymers; and
wherein B is a polymer comprising conjugated diene monomers.

86. An elastomeric material as recited in claim 79,

wherein said ultra high molecular weight thermoplastic elastomer is a triblock copolymer of the general configuration A-B-A;

wherein A is selected from the group consisting of monoalkenylarene polymers;

wherein B is a hydrogenated polymer comprising conjugated diene monomers; and

wherein at least one of said conjugated diene monomers is ethylene/propylene.

87. An adhesive elastomeric material comprising:

an elastomer component having a triblock copolymer of the general configuration A-B-A

and

a plasticizer component;

wherein said elastomer component and said plasticizer component are mixed together to form the adhesive elastomeric material;

wherein said plasticizer component includes a tackifier;

wherein A is selected from the group consisting of monoalkenylarene polymers;

wherein B is hydrogenated polymer including a plurality of conjugated diene monomers;

wherein said plasticizer component tends to associate with said hydrogenated polymer B;

wherein the adhesive elastomeric material deforms in response to a pressure exerted on the material;

wherein the adhesive elastomeric material instantaneously reforms to substantially its original size and shape following cessation of the pressure;

wherein said elastomer component has a measurable percent elongation at break;

wherein said plasticizer component tends to increase the percent elongation at break of said elastomer component;

wherein said elastomer component has a rigidity measurable on the Gram Bloom scale; and

wherein said plasticizer component tends to decrease the Gram Bloom rigidity of said elastomer component.

88. An adhesive elastomeric material as recited in claim 87, wherein said tackifier comprises at least about 20 weight percent of said plasticizer component.

89. An adhesive elastomeric material as recited in claim 87, wherein said tackifier comprises at least about 40 weight percent of said plasticizer component.

90. An adhesive elastomeric material as recited in claim 87, wherein said tackifier comprises at least about 60 weight percent of said plasticizer component.

91. An adhesive elastomeric material as recited in claim 87, wherein said tackifier comprises substantially all of said plasticizer component, by weight.

92. An adhesive elastomeric material as recited in claim 91, wherein said tackifier is selected from the group consisting of room temperature liquid hydrocarbon tackifying resins and room temperature semi-solid hydrocarbon tackifying resins.

93. An adhesive elastomeric material as recited in claim 87, wherein the weight majority of said tackifier is selected from the group consisting of room temperature liquid hydrocarbon tackifying resins and room temperature semi-solid hydrocarbon tackifying resins.

94. An adhesive elastomeric material as recited in claim 93, wherein said tackifier comprises at least about 40 weight percent of said plasticizer component.

95. An adhesive elastomeric material as recited in claim 87, and further comprising a detackifying layer, wherein said detackifying layer contacts at least a portion of the exterior surface of the adhesive elastomeric material.
96. An adhesive elastomeric material as recited in claim 95, wherein said detackifying layer is selected from the group consisting of fabric, discontinuous fibers, particulate matter, microspheres, non-tacky elastomers and films.
97. An adhesive elastomeric material as recited in claim 87, wherein said plasticizer component comprises a plurality of constituents; wherein the majority of said constituents are compatible with said hydrogenated polymer B; wherein at least one of said constituents is a hydrocarbon resin; and wherein at least one of said constituents is selected from the group consisting of naturally derived oils, synthetic oils, and liquid oligomers.
98. An adhesive elastomeric material as recited in claim 87, wherein said plasticizer component increases the percent elongation at failure of said elastomer component by at least about a factor of two.
- Sub 35* 99 A gelatinous elastomeric material comprising:
a triblock copolymer of the general configuration A-B-A;
a plasticizing agent; and
an additive;
wherein said tri block copolymer, said plasticizing agent, and said additive are mixed together to form the gelatinous elastomeric material;
wherein A is a polymer selected from the group consisting of monoalkenylarene polymers;

Sub 25 cont.

wherein B is a hydrogenated polymer comprising a plurality of covalently linked conjugated diene monomers;

wherein at least one of said conjugated diene monomers is isoprene;

wherein said triblock copolymer is selected from the group consisting of very high molecular weight triblock copolymers of the general configuration A-B-A and ultra high molecular weight triblock copolymers of the general configuration A-B-A;

wherein said plasticizer comprises at least about 60 weight percent of the material, based on the combined weights of said plasticizer and said triblock copolymer;

wherein said additive is selected from the group consisting of detackifying layers, foaming facilitators, tack modifiers, plasticizer bleed modifiers, flame retardants, melt viscosity modifiers, melt temperature modifiers, tensile strength modifiers, and shrinkage inhibitors;

wherein the gelatinous elastomeric material has a rigidity measurable on the Gram Bloom scale;

wherein said plasticizer tends to reduce the Shore A rigidity of the gelatinous elastomeric material;

wherein the gelatinous elastomeric material has a durometer of about 15 Shore A or lower; and

wherein the gelatinous elastomeric material has a rebound rate of about one second or less.

100. A gelatinous elastomeric material as recited in claim 99, wherein the additive is a melt temperature modifier selected from the group consisting of diblock copolymers of the general configuration A-B, triblock copolymers of the general configuration A-B-A, cross-linking agents, and hydrocarbon resins;

wherein A is a polymer comprising functionalized styrene monomers.

101. A gelatinous elastomeric material as recited in claim 99, wherein the additive is a tack modifier selected from the group consisting of surfactants, dispersants, and emulsifiers.

102. A gelatinous elastomeric material as recited in claim 99, wherein the additive is a tack modifier selected from the group consisting of hydrocarbon resins, polyisobutylene, and butyl rubber.

103. A gelatinous elastomeric material as recited in claim 99, wherein the additive is a foam facilitator selected from the group consisting of polyisobutylene, butyl rubber, surfactants, emulsifiers and dispersants.

104. A gelatinous elastomeric material as recited in claim 99, wherein the additive is a plasticizer bleed modifier selected from the group consisting of hydrocarbon resins, elastomeric diblock copolymers, polyisobutylene, butyl rubber, and transpolyoctenylene rubber.

105. A gelatinous elastomeric material as recited in claim 99, wherein the additive is a plasticizer bleed modifier selected from the group consisting of hydrocarbon resins, elastomeric diblock copolymers, polyisobutylene, butyl rubber, and transpolyoctenylene rubber.

106. A gelatinous elastomeric material as recited in claim 99, wherein the additive is a flame retardant selected from the group consisting of halogenated flame retardants, non-halogenated flame retardants, and volatile, non-oxygen gas forming chemicals.

107. A gelatinous elastomeric material as recited in claim 99,
wherein said additive is a melt viscosity modifier selected from the group consisting of hydrocarbon resins, transpolyoctenylene rubber, castor oil, linseed oil, non-ultra high molecular weight thermoplastic rubbers, surfactants, dispersants, and emulsifiers; and
wherein said additive reduces the melt viscosity of the gelatinous elastomeric material.

108. A gelatinous elastomeric material as recited in claim 99,

wherein said additive is a melt viscosity modifier selected from the group consisting of hydrocarbon resins, butyl rubber, polyisobutylene, additional triblock copolymers having the general configuration A-B-A, particulate fillers, microspheres, butadiene rubber, ethylene/propylene rubber, and ethylene/butylene rubber;

weight average
wherein the molecular weight of said additional triblock copolymers is greater than the *weight average*
molecular weight of said triblock copolymer; and

wherein said additive increases the melt viscosity of the gelatinous elastomeric material.

109. A gelatinous elastomeric material as recited in claim 99,

wherein said additive is a tensile strength modifier selected from the group consisting of mid block B associating hydrocarbon resins, non-end block A solvating hydrocarbon resins, and particulate reinforcers;

wherein said additive increases the tensile strength of the gelatinous elastomeric material.

110. A gelatinous elastomeric material as recited in claim 99, wherein said additive is a

shrinkage reducer selected from the group consisting of hydrocarbon resins, particulate fillers, microspheres, and transpolyoctenylene rubber.

Sub Block 111. A gelatinous elastomeric material comprising:

a triblock copolymer of the general configuration A-B-A;

a plasticizing agent; and

an additive;

wherein said tri block copolymer, said plasticizing agent, and said additive are mixed together to form the gelatinous elastomeric material;

wherein A is a polymer selected from the group consisting of monoalkenylarene polymers;

Subb 36
wherein B is a hydrogenated polymer comprising a plurality of covalently linked conjugated diene monomers;

wherein said triblock copolymer is selected from the group consisting of very high molecular weight triblock copolymers of the general configuration A-B-A and ultra high molecular weight triblock copolymers of the general configuration A-B-A;

wherein said plasticizer comprises at least about 60 weight percent of the material, based on the combined weights of said plasticizer and said triblock copolymer;

wherein said additive is selected from the group consisting of detackifying layers, foaming facilitators, tack modifiers, plasticizer bleed modifiers, flame retardants, melt viscosity modifiers, melt temperature modifiers, tensile strength modifiers, and shrinkage inhibitors;

wherein the gelatinous elastomeric material has a rigidity measurable on the Gram Bloom scale;

wherein said plasticizer tends to reduce the Shore A rigidity of the gelatinous elastomeric material;

wherein the gelatinous elastomeric material has a durometer of about 15 Shore A or lower; and

wherein the gelatinous elastomeric material has a rebound rate of about one second or less.

54 142 53 A gelatinous elastomeric material as recited in claim 111, wherein the additive is a melt temperature modifier selected from the group consisting of diblock copolymers of the general

configuration A-B, triblock copolymers of the general configuration A-B-A, cross-linking agents, and hydrocarbon resins;

wherein A is a polymer comprising functionalized styrene monomers.

113. A gelatinous elastomeric material as recited in claim 111, wherein the additive is a tack modifier selected from the group consisting of surfactants, dispersants, and emulsifiers.

114. A gelatinous elastomeric material as recited in claim 111, wherein the additive is a tack modifier selected from the group consisting of hydrocarbon resins, polyisobutylene, and butyl rubber.

115. A gelatinous elastomeric material as recited in claim 111, wherein the additive is a foam facilitator selected from the group consisting of polyisobutylene, butyl rubber, surfactants, emulsifiers and dispersants.

116. A gelatinous elastomeric material as recited in claim 111, wherein the additive is a plasticizer bleed modifier selected from the group consisting of hydrocarbon resins, elastomeric diblock copolymers, polyisobutylene, butyl rubber, and transpolyoctenylene rubber.

117. A gelatinous elastomeric material as recited in claim 111, wherein the additive is a plasticizer bleed modifier selected from the group consisting of hydrocarbon resins, elastomeric diblock copolymers, polyisobutylene, butyl rubber, and transpolyoctenylene rubber.

118. A gelatinous elastomeric material as recited in claim 111, wherein the additive is a flame retardant selected from the group consisting of halogenated flame retardants, non-halogenated flame retardants, and volatile, non-oxygen gas forming chemicals.

119. A gelatinous elastomeric material as recited in claim 111,

wherein said additive is a melt viscosity modifier selected from the group consisting of hydrocarbon resins, transpolyoctenylene rubber, castor oil, linseed oil, non-ultra high molecular weight thermoplastic rubbers, surfactants, dispersants, and emulsifiers; and

wherein said additive reduces the melt viscosity of the gelatinous elastomeric material.

120. A gelatinous elastomeric material as recited in claim 111,

wherein said additive is a melt viscosity modifier selected from the group consisting of hydrocarbon resins, butyl rubber, polyisobutylene, additional tri block copolymers having the general configuration A-B-A, particulate fillers, microspheres, butadiene rubber, ethylene/propylene rubber, and ethylene/butylene rubber;

wherein the ^{weight average} molecular weight of said additional triblock copolymers is greater than the

^{weight average} molecular weight of said triblock copolymer; and

wherein said additive increases the melt viscosity of the gelatinous elastomeric material.

121. A gelatinous elastomeric material as recited in claim 111,

wherein said additive is a tensile strength modifier selected from the group consisting of mid block B associating hydrocarbon resins, non-end block A solvating hydrocarbon resins, and particulate reinforcers;

wherein said additive increases the tensile strength of the gelatinous elastomeric material.

122. A gelatinous elastomeric material as recited in claim 111, wherein said additive is a

shrinkage reducer selected from the group consisting of hydrocarbon resins, particulate fillers, microspheres, and transpolyoctenylene rubber.

add
add
ADD B11
112